

AMENDMENTS TO THE SPECIFICATION:

Please replace the 4th paragraph on page 1, beginning at line 27, with the following amended paragraph:

Known furnaces for the cracking of hydrocarbon are usually provided with cast tubing of nickel-based alloys with high amounts of chromium. This leads to some ~~disadvan-tages~~ disadvantages because such tube materials are more expensive and further, high nickel content can be a catalyst for undesirable coking.

Please replace the 2nd paragraph on page 2, beginning at line 4, with the following amended paragraph:

In a cracker, a decomposition of a hydrocarbon occurs. The starting materials could be for instance naphta or propane mixed with water vapor. When the material passes through the tubes in the cracking furnace the temperature is increased to above 800° C. Important products that are being obtained are for instance ethylene and propane. Also hydrogen gas, methane, butane and other hydrocarbons are being formed. In order to avoid undesired reactions it is essential that such heating occurs very rapidly and that the obtained products are subjected to quenching; ~~[[-]]~~ the maintenance time in the furnace only amounts to some tenths of seconds. The temperature in the furnace can reach 1100-1200°C, ~~[[-]]~~ and the tube material temperature in the furnace could be above 1100°C. The heating of the furnace room could occur by combustion of gases from the cracking process such as hydrogen and methane, and a furnace can be equipped with a large number of gas burners that can be arranged in the floor or in the walls of such furnace.

Please replace the 1st paragraph on page 3, beginning at line 1, with the following amended paragraph:

According to one aspect, the present invention provides a metal tube for use in furnaces where gas and liquid formed media is being pressed through such tube from its inlet end to its opposite end while being subjected to substantial heating and decomposition therefrom, the metal tube comprising: a body; a smooth outer surface; and an inner surface with a profile; wherein the body is made of a stainless iron-nickel-chromium base alloy comprising, in weight-%: ~~[[-]]~~max 0.08% C, 23-27% Cr, 33-37% Ni, 1.3-1.8% Mn, 1.2-2% Si, 0.08-0.25% N, 0.01-0.15% rare earth metals, balance Fe and normal impurities; and the profile comprises a plurality of valleys or recesses, said valleys or recesses extending longitudinally along the tube, and having a smoothly curved bottom.

Please replace the 5th paragraph on page 3, beginning at line 24, with the following amended paragraph:

~~Fig. 2~~ FIG. 2A shows a cross section of the tube of Fig. 1.

FIG. 2B shows another cross section with helical features.

Please replace the 8th paragraph on page 3, beginning at line 29, with the following amended paragraph:

FIGS. 5A to 5D show ~~Fig. 5 shows~~ the measurement results for carburizing in terms of area fraction ~~function~~ of carbides.

Please replace the 2nd paragraph on page 4, beginning at line 6, with the following amended paragraph:

In the embodiment as shown, the inner surface 11 of the tube 10 is provided with ~~re-cesses~~ recesses 13 and ridges 14 of a sinusoidal shaped contour, while the outer surface 16 is substantially smooth or arcuate, see Fig. 2A ~~Fig. 2~~. The ridges 14 and the recesses 13 are provided with a rounded profile to avoid fatigue cracks.

Please replace the 3rd paragraph on page 4, beginning at line 10, with the following amended paragraph:

In accordance with an alternative embodiment, the interiorly provided recesses 13 of the cylinder 10 can be helically provided in the longitudinal direction 15 of said tube as shown in FIG. 2B.

Please replace the 5th paragraph on page 4, beginning at line 15, with the following amended paragraph:

It has been found that the shape permanence during heating of tubes according to the present invention can be improved if the tubes are made by pilger rolling over a mandrel, in principle in the manner as shown and described in U.S. Patent No. 4,095,447. Alternatively, however, such tubes could be made in the manner described in U.S. Patent No. 5,016,460. Instead of pilger rolling over a mandrel, drawing over a mandrel can be applicable.

Please replace the 3rd paragraph on page 6, beginning at line 15, with the following amended paragraph:

After the test was completed the test rods were taken out and a cross section thereof was studied by looking upon how the area fraction of carbides varied along a selected line. The cross section of said test rods had a square shaped outer surface and with this test rod design it was found that the carbonizing was much depending on where on this outer surface the measurement was made. Areas close to corners and edges appeared to be more sensitive to carbonizing than those surfaces that were planar. In Fig. 4, it is shown the position of the lines that are analyzed in the cross section of the test rod. The first line (~~Prof 10~~) A was located 0.8 mm (10% of the edge length) into the material along the outer surface. The second line (~~Prof 50~~) B was located 4 mm from a corner whilst being extended through the center of the test rod. In Fig. 4, it is schematically shown how carburizing varies depending on whether the location is close to an edge or extending far into a planar surface.

Please replace the 1st paragraph on page 7, beginning at line 1, with the following amended paragraph:

In Fig. 5 the results from the area fraction analysis of carbides are presented. The x-axis represents the distance from the start point at one outer surface (0-8 mm) and the y-axis shows the measured area fraction of carbides (%). The diagram shows that Sanicro 39 and HP45-Nb are not affected by carburizing from planar surfaces (~~Prof 50~~) B and out of these two Sanicro 39 appeared with the best resistance towards carburizing in the area close to the corners or the edges (~~prof 10~~)

A. The alloy 803 was affected by massive carburizing in the corner areas and also appeared with strong carburizing on the planar surfaces. The alloy HK4M was subjected to carburizing to its maximum through the entire material.

Please cancel the current Abstract and replace it with the following new
Abstract: